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April 13, 2006

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station, 2nd Floor
Boston, MA 02108

Re: KeySpan Energy Delivery New England, D.T.E. 05-68

Dear Ms. Cottrell:

Please find attached the Initial Brief of KeySpan Energy Delivery New England in the above-referenced proceeding. If you have any questions, please contact me or Cheryl Kimball at (617) 951-1400 or:

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Thank you for your consideration and assistance in this matter.

Very truly yours,

John K. Habib

John K. Habib

Enclosure

cc: Andrea Saia, Hearing Officer
Joseph Rogers, Assistant Attorney General
Colleen McConnell, Assistant Attorney General
Service List

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

KeySpan Energy Delivery New England	)	D.T.E. 05-68

INITIAL BRIEF OF KEYSPAN ENERGY DELIVERY NEW ENGLAND

I. INTRODUCTION

On October 13, 2005, in accordance with G.L. c. 164, §§ 69I, et seq., Boston Gas Company, Colonial Gas Company and Essex Gas Company, each d/b/a/ KeySpan Energy Delivery New England (collectively, "KeySpan" or "Company") submitted for approval by the Department of Telecommunications and Energy ("Department") its Long Range Resource and Requirements Plan (the "Supply Plan") for the forecast period November 1, 2005 through October 31, 2010. The Department docketed the proceeding as D.T.E. 05-68. The Attorney General of the Commonwealth (the "Attorney General") intervened as of right pursuant to G.L. c. 12, § 11E.

On March 30, 2006, the Department conducted an evidentiary hearing. The Company presented the testimony of three witnesses: (1) Theodore Poe, Jr., Manager, Load Forecasting; (2) Leo Silvestrini, Director, Sales and Load Forecasting; and (3) Elizabeth D. Arangio, Director, Gas-Supply Planning. The evidentiary record consists of 90 exhibits and seven responses to record requests issued by the Attorney General.

Together, Boston Gas, Colonial Gas and Essex Gas provide natural gas sales and transportation service to approximately 830,000 residential and commercial customers in 86 cities and towns in Massachusetts. These companies are wholly owned subsidiaries of KeySpan New

England, LLC, which is a subsidiary of KeySpan Corporation. In KeySpan Energy Delivery New England, D.T.E. 01-105 (2003), the Department reviewed and approved the first consolidated supply plan for the KeySpan companies in Massachusetts for the forecast period 2001/02 through 2005/06.

The Company's filing in this case complies with the Department's traditional forecast and supply plan requirements pursuant to G.L. c. 164, § 69I. As a gas company operating under G.L. c. 164 § 1, the Company has an obligation to provide safe, reliable and least-cost gas service to its customers. The Company's Supply Plan is designed to demonstrate that the Company's gas-resource planning process has resulted in a reliable resource portfolio to meet the combined forecasted needs of KeySpan's Massachusetts customers at the lowest possible cost. To make this demonstration, the Supply Plan presented to the Department includes: (i) a step-by-step description of the methodology the Company uses to forecast demand on its system; (ii) a discussion of how the Company develops its resource portfolio to meet customer requirements under design-weather conditions; and (iii) a complete inventory of the expected available resources in the Company's portfolio and a demonstration of the adequacy of the portfolio to meet customer demands under a range of weather and economic conditions. The Company's filing demonstrates that, over the entire forecast period, it has adequate resources to meet its firm customers' demand under normal-year, design-year and design-day planning standards.

II. THE COMPANY'S LONG RANGE FORECAST

A. Standard of Review

Pursuant to G.L. c. 164, § 69I, the Department is required to ensure "a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost." In accordance with this mandate, the Department reviews the long-range forecast of each gas utility to ensure that the forecast accurately projects the gas sendout requirements of the utility's market area. G.L. c. 164, § 69I. A forecast must reflect accurate and complete historical data, and reasonable statistical projection methods. Id., citing 980 C.M.R. 7.02(9)(b).

The Department evaluates gas sendout forecasts by applying three criteria. First, a forecast is reviewable if it contains enough information to allow a full understanding of the forecasting methodology. Second, a forecast is appropriate if the methodology used to produce the forecast is technically suitable to the size and nature of the utility that produced it. Third, a forecast is reliable if the methodology provides a measure of confidence that its data, assumptions, and judgments produce a forecast of what is most likely to occur. Bay State Gas Company, D.T.E. 02-75, at 2 (2004); The Berkshire Gas Company, D.T.E. 02-17, at 2 (2003); Haverhill Gas Company, 8 DOMSC 48 at 50-51 (1982).

Specifically, the Department examines a gas company's: (1) planning standards, including its weather data; (2) forecast method, including the forecast results; and (3) derivation and results of its design and normal sendout forecasts. See D.T.E. 02-75, at 2-3; D.T.E. 02-17, at 3; see also Boston Gas Company, D.P.U. 94-109 (Phase I) at 9 (1996). The Department also reviews a company's scenario analysis, which is used for evaluating the flexibility of the company's planning process, including any cold-snap analysis and sensitivity analysis. D.T.E. 02-75, at 3; D.T.E. 02-17, at 3; Boston Gas Company, 25 DOMSC 116, at 200 (1992). As described in further detail herein, the Company has demonstrated that its sendout forecast methodology is reviewable, appropriate and reliable.

B. **The Company's Long Range Forecast Methodology is Reviewable, Appropriate and Reliable.**

1. Planning Standards

The Company's planning standards should be approved because they are reviewable, appropriate and reliable. D.T.E. 02-75, 2; D.T.E. 02-17; at 2; 8 DOMSC 48, at 50-51. The Company performs a cost-benefit analysis to determine the appropriate design-day and design-year planning standards to develop a least-cost reliable supply portfolio over the forecast period.

a. Normal Year Standards

To establish the normal year's daily effective degree day ("EDD") data, KeySpan calculated the average annual number of EDD for the Logan International Airport ("LIA") weather station for the calendar years 1971 through 2004 and found the values to be within a normal distribution, with an average of 6,458.3 EDD and a standard deviation of 348.4 EDD (Exh. KED-1, at 51). KeySpan then prepared a "Typical Meteorological Year" by selecting, for each calendar month, the month in the LIA weather database that most closely approximated the twenty-year average EDD and standard deviation for each month (id., at 51 and Chart III-E-1).

The Department has approved the use of LIA weather data as reliable. KeySpan Energy Delivery New England, D.T.E. 01-105, at 5. In addition, the Department has previously accepted the use of an arithmetic average of historical degree days and EDD to establish a normal year. Id. at 9, citing D.T.E. 01-47, at 7; D.T.E. 99-26, at 5-6; D.P.U. 96-18, at 9. Accordingly, the Department should find that KeySpan's method for establishing its normal year standard is reviewable, appropriate and reliable.

b. Design Day Standard

KeySpan's design day standard is 79 EDD with a probability of occurrence of once in 43.62 years, as a result of its on-going review of planning standards (Exh. KED-1, at 52). The Company established its design day standard using a three-step process. First, the Company performed a statistical analysis of the coldest days recorded over a historical period (id.). To perform the statistical analysis necessary to identify the appropriate design-day standard, KeySpan used recorded daily EDD values based on observations at the LIA weather site for the period January 1971 through December 2004 (id. at 53). Specifically, the Company selected the coldest day of each of the past 34 years reflected in the LIA weather data (id.). The Company found that these 34 data points fell within a normal distribution with an average of 66.6 EDD and a standard deviation of 6.1 EDD (id.).

Second, the Company conducted a cost-benefit analysis to evaluate the cost of maintaining the resources necessary to meet design day demand versus the cost to customers of experiencing service curtailments (Exh. KED-1, at 53). The Company determined the probability-weighted costs of damages to residential and commercial and industrial ("C&I") customers separately, in the event a service curtailment should occur (id. at Charts III-E-3 through 7). For residential customers, the Company calculated the costs of damages associated with: (1) re-light expenses; and (2) freeze-up costs (id. at 53-54; Exh. KED-DTE-1-2; Exh. KED-DTE-1-3).[1] For C&I customers, the Company calculated the costs associated with economic damages resulting from loss of production during a curtailment (id. at 54-55; Exh.

1 The Company obtained updated costs estimates for freeze-up damages from Marsh & McLennan, a property loss consulting firm (Exh. KED-1, at 54).

KED-DTE-1-3). The Company also estimated the costs to residential and C&I customers associated with maintaining adequate deliverability at different EDD levels (id. at 55).

Third, the Company identified a design-day standard that would maintain reliability at the lowest cost (Exh. KED-1, at 53). The Company determined a range for design-day planning purposes of approximately 75 to 83 EDD with a midpoint of 78.8 EDD, which the Company rounded to an even integer value of 79 EDD for consistency in its planning methodology (id. at 55). The frequency of occurrence of KeySpan's design day standard is once in 43.62 years (id. at Chart III-E-3). The 79 EDD design day is one EDD less than the 80 EDD recorded on January 15th, 2004, the coldest day in the LIA weather-site data from 1971 to the present (id. at 55).

The Company's methodology for establishing a design-day standard promotes both cost-effective and reliable resource planning. The Company's methodology balances the benefits of providing a reliable service against the costs of providing such services to customers. Moreover, the Company followed appropriate statistical and analytical procedures in establishing its design-day standard. Accordingly, the Department should find that the Company's design-day standard is reviewable, appropriate and reliable.

c. Design Year Standard

KeySpan maintains a design year standard for planning purposes to identify the amount of seasonal supplies of natural gas that will be required to provide continuous service under all reasonable weather conditions (Exh. KED-1, at 56). KeySpan has established its design-year standard using a three-step process (id.).

First, the Company performed a statistical analysis of annual EDD data recorded over a historical period (1974 through 2004), which established a baseline of the normal annual EDD of

6,458 (id. at 57 and Chart III-E-1). Second, the Company performed a cost-benefit analysis by examining the cost of potential customer curtailments in relation to the cost of maintaining adequate supplies to meet the design-year standard (id. at 57-59). Because a failure to perform on a seasonal basis would mean that adequate supplies were not available to meet customer needs, KeySpan views the cost of failure to deliver as the economic penalty within the service territory associated with the need to curtail gas sales for a period of time (id. at 57). The Company estimated the potential losses based on the product of the potential economic cost per day of interruption, times the number of days of interruption (id.). Third, the Company identified a design-year standard that would maintain reliability at the lowest cost (Exh. KED-1, at 57). By following this process, the Company established a design-year planning standard that falls within a range of 6,960 to 7,190 EDD, with a mid point of 7,120 EDD (id. at 60). The Company's analysis also demonstrates that the frequency of occurrence of KeySpan's design-year standard is once in 34.76 years (id. at 60 and Chart III-E-10).

KeySpan's methodology for determining its design-year standard is consistent with Department precedent in that it is based on a probabilistic analysis. 1986 Gas Generic Order, 14 DOMSC 95, at 96-97, 1-4-105 (1986). In addition, the Company's cost-benefit analysis is adequate in that the data used to estimate the actual costs associated with service curtailment are reliable and the assumptions underlying the cost-benefit analyses are reasonable. Accordingly, the Department should find that the Company's design-year standard methodology and data are reviewable, appropriate and reliable.

d. Cold Snap Planning Standard

In addition to the design-day, design-year and normal-year planning standards, the Company also evaluates the capability of the resource portfolio to meet sendout requirements during a protracted period of very cold weather, which is referred to as a "cold snap" (Exh. KED-1, at 82). The cold-snap evaluation was performed by modeling daily sendout and observing the predicted resource usage over a specified set of EDD (id.). Using the period 1971-2004, the Company determined that the mean total EDD for the last two weeks of February is 490.8 with a standard deviation of 73.3 (id.). A once-in-50-year occurrence is 2.06 times the standard deviation above the mean, or 642 EDD (id.).

To generate its 14-day cold-snap scenario, the Company selected the actual coldest period during the period February 15-28, in the years 1971-2004, which occurred in 1993 (625 EDD) (Exh. KED-1, at 82). The Company then added one EDD to each day, plus one additional EDD on the coldest three days (February 19, 24, and 25) for a total of 17 additional EDDs (id. and Chart IV-D-1). The Company then analyzed the effectiveness of the portfolio with an EDD pattern of (a) normal EDD up to the final two weeks of February; (b) the cold-snap EDD, followed by (c) normal EDD (id. at 82-83).

Using base-case demand, the Company analyzed the effectiveness of the portfolio in meeting normal weather from November 1 through February 14, followed by a two-week cold snap, followed by normal weather (Exh. KED-1, at 83). The results of the simulation, using the SENDOUT® model, showed that the Company's portfolio can meet the cold-snap requirement in all years of the forecast, and therefore, is adequate to meet sustained, cold weather in each year of the forecast (id.).

2. Forecasting Methods

a. Introduction

The Company's forecast methodology for the Supply Plan is the same as that approved by the Department in KeySpan Energy Delivery, D.T.E. 01-105 (2003). The Company applied "end-use modeling' methodology to forecast incremental demand by traditional and non-traditional end-uses, which has been reviewed and approved by the Department in several previous cases presented by the Company. KeySpan Energy Delivery, D.T.E. 01-105 (2003); Boston Gas Company, D.P.U. 94-109 (Phase I) (1996); Boston Gas Company, E.F.S.C. 91025 (1992); Boston Gas Company, E.F.S.C. 88-25 (1990). Throughput in traditional customer markets includes the residential sector, the apartment house sector, and the C&I sector (Exh. KED-1, at 9).

Second, KeySpan develops a forecast for non-traditional markets that includes natural-gas vehicles, seasonal firm gas sales made under special contracts and large-scale power generation (id.). KeySpan's natural gas demand forecast for traditional customers, together with its forecasts of non-traditional market demands, results in a total forecast of incremental customer demand over the 2005-06 through 2009-10 forecast period (id. at 10).

Third, KeySpan accounts for the load reductions forecasted to result from the implementation of demand-side management ("DSM") programs because these reductions are exogenous to the demand forecast generated by the End-Use Model (Exh. KED-1, at 10). These load reductions are based on estimated savings from KeySpan's approved market transformation program (id.).

Fourth, KeySpan develops a forecast of firm loads that are projected to migrate from sales to transportation-only service (Exh. KED-1, at 10). This projection is based on the experience that the Company has had in relation to the Boston Gas transportation program, which was initiated in 1996, and the statewide customer choice program that was implemented in November 2000 (id.).

Fifth, KeySpan develops two alternatives to the base-case demand forecast, which represent high and low sendout cases (Exh. KED-1, at 10). The development of these alternative forecasts enables the Company to evaluate its ability to meet customer requirements with portfolio resources under a range of weather and economic conditions (id.).

The last two steps of the process involve (a) a comparison of the newly developed forecast to the forecasts of demand presented in the Company's previous filing; and (b) a comparison of the forecast and actual load additions for the historical four-year period 2001 through 2004 in the KeySpan service territory (Exh. KED-1, at 11). These comparisons are designed to serve as indicators of potential forecasting errors and, to the extent that these comparisons showed significant variation, the Company has refined its forecasting model to improve accuracy (id.).

b. The End-Use Model

KeySpan's end-use forecasting methodology projects total energy demand in the service territory by end use and fuel, including natural gas (Exh. KED-1, at 11). The end-uses included in both KeySpan's residential-sector forecast and the commercial/industrial sector forecast are space heating, water heating, cooking, drying, and other (id.).

In addition, KeySpan's end-use forecasting methodology is a bottom-up approach that simulates the behavioral patterns of individual customers as they make choices about energy equipment, energy sources, and consumption levels (Exh. KED-1, at 12). The End-Use Model also simulates how customers will adjust their level of energy consumption in response to changes in energy prices (id.). The result of this analysis is an estimate of annual incremental energy demand for each market segment and the share of that demand that will be captured by natural gas (id.). In general, KeySpan's end-use demand forecasting for traditional markets is a four-step process that consists of:

(1) Identifying base-year energy demand in the Company's service territory by region, building type, end-use and fuel type (i.e., gas, electricity, and oil) using a detailed study of base year (2001) energy consumption derived from KeySpan's historical sales data by customer class in combination with data from a variety of other sources (id. at 12-13);

(2) Comparing the model outputs to actual consumption for the years between the base year and the first year of the forecast, and recalibrating the model by adjusting the algorithm coefficients (id. at 13);

(3) Forecasting annual incremental demand beyond 2006 by market segment under normal weather conditions based on the results of economic and demographic growth forecasts, fuel-price projections, equipment-replacement rates and equipment-efficiency assumptions (id.); and

(4) Converting forecasted levels of annual incremental demand (sales) over the forecast period to incremental sendout requirements. KeySpan converts its annual incremental sales forecast to incremental sendout requirements by adjusting forecasted incremental sales for unaccounted-for and company-use gas (id.).

The latest design review of the End-Use Model was completed by XENERGY in 2000 and was documented in the Company's most recently approved Supply Plan filing, KeySpan Energy Delivery, D.T.E. 01-105. For this filing, the Company recalibrated the model for the years 2001 (the updated base year) through 2004 (the most recent year for which actual data is available) (id. at 13-14; Exh. KED-DTE-2-1; Exh. KED-DTE-2-5; Exh. KED-DTE-2-6; Exh. KED-DTE-2-8).

c. Base Year Energy Demand

The Company updated its base year total energy demand to 2001 (Exh. KED-1, at 14). Total demand for the residential and C&I classes was disaggregated by end use, building type, municipality and fuel type (id.).

KeySpan developed its Residential Base Year Model by multiplying the total number of households in its service territory by the total energy demand by city and building type, based on the Company's historical customer data, information from KeySpan's sales records and the Department of Energy/Energy Information Administration (Exh. KED-1, at 15-16). KeySpan's commercial/industrial base-year model estimates total energy demand by municipality, North American Industry Systems Classification ("NAICS") code, end use and fuel type (id. at 16; see also Exh. KED-DTE-2-10). The modeling procedure is similar to that for the residential market, except that the C&I forecast is driven by employment projections (Exh. KED-1, at 16). Therefore, the commercial/industrial 2001 base year demand numbers were estimated by relying on: (a) employment data for the KeySpan service territory; (b) energy intensity factors reflecting energy consumption per employee, and (c) fuel market shares (id.). In addition, KeySpan ensures the accuracy of its End Use model through periodic recalibrations of the model, in an effort to ensure an acceptable level of accuracy, i.e., within plus or minus 2 percent (id. at 17-18).

d. Forecast of Incremental Demand for Traditional Markets

Using the base-year energy demand as a starting point, KeySpan next forecasted annual incremental energy consumption by market segment based on the results of economic and demographic growth forecasts, fuel-price projections, equipment-replacement rates and equipment-efficiency assumptions (Exh. KED-1, at 18). The forecasting models for each market segment distinguish between new and existing establishments and project energy demand for each market segment (id.).

For each market segment, KeySpan forecasts gross and net annual load additions (Exh. KED-1, at 19). The gross annual load additions are the total increases in gas consumption resulting from the installation of new gas-fired equipment in either existing or new buildings (id.). KeySpan's forecast methodology then accounts for the reduction in gas consumption among existing customers resulting from the replacement of older equipment with newer, more efficient equipment and the impact of DSM programs (id.). Lastly, the Company accounts for the portion of load growth that is projected to initiate service as transportation load, because this load does not rely on transportation capacity under contract to the Company (id.). Subtracting these load reductions from the gross annual additions results in the net annual load additions (id.).

The Company projects that over the forecast period there will be total gross throughput additions over the forecast period of 18,546 BBtus for traditional core markets (Exh. KED-1, at 19, Chart III-B-5). On a net basis, KeySpan projects that it will add 15,366 BBtus of core throughput during the forecast period (id.at 19, Chart III-B-5).

The Company's Supply Plan presented the following information regarding its traditional market segment forecasts:

⇒ Residential Market

KeySpan's demand forecast for residential structures with one to four units is 10,362 BBtus of total gross incremental load additions and 8,315 BBtus of net incremental load additions over the forecast period (consisting of an incremental average of 2,072 BBtus gross load annually, and 1,663 BBtus net load annually, between 2006 and 2010) (Exh. KED-1, at 20, Chart III-B-5). KeySpan prepared the residential incremental demand forecast employing the end-use demand model for new and existing households (id. at 20-23). The End-Use Model for new residential households forecasts demand using a projection of the number of new households and a simulation of the fuel choice decisions for energy equipment in those new households (id. at 20). The existing household model forecasts demand by simulating equipment-replacement decisions and annual energy consumption levels among existing households (id. at 21).

⇒ Apartment-House Market

KeySpan's demand forecast for apartment houses (residential structures with five or more units) shows 1,079 BBtus of total gross annual load additions and 818 BBtus of net annual load additions over the forecast period (consisting of an incremental average of 216 BBtus gross load annually and 164 BBtus net load annually between 2006 and 2010) (Exh. KED-1, at 23 and Chart III-B-5). KeySpan prepared the demand forecast for the apartment-house market using separate end-use models for new and existing apartment houses (id. at 23).

The End-Use Model for the new apartment-house market forecasts demand based on (1) a projection of the number of new households; and (2) the fuel choice decisions simulated for the energy equipment in those households (Exh. KED-1, at 23). The existing apartment-house model forecasts demand by simulating equipment-replacement decisions and annual energy-consumption levels among existing apartment houses (id. at 24).

⇒ Commercial and Industrial Market

KeySpan's updated commercial and industrial demand forecast shows 7,105 BBtus of total gross incremental load and 6,232 BBtus of net incremental load over the forecast period (consisting of an incremental an average of 1,421 BBtus gross load annually and 1,246 BBtus net load annually between 2006 and 2010) (Exh. KED-1, at 26 and Chart III-B-5). KeySpan prepared the incremental demand forecast for the commercial/industrial market using separate end-use demand models for new and existing commercial/industrial establishments (id. at 26)

The End-Use Model for new commercial/industrial markets forecasts demand by projecting the growth in employment and simulating the fuel choice decisions for new energy equipment (Exh. KED-1, at 26). The existing commercial/industrial model forecasts demand by simulating equipment-replacement decisions and annual energy-consumption levels (Exh. KED-1, at 27). These commercial/industrial net annual load additions are added to those from other market segments to calculate the total net annual load additions, which are then used to determine KeySpan's annual sendout requirements (id. at 29).

e. Demand Forecast for Non-Traditional Markets

⇒ Natural Gas Vehicles

KeySpan forecasts that it will add 291 BBtus on both a net and gross basis in the Natural Gas Vehicle ("NGV") market between 2006 and 2010 (id. at 29). This market includes load additions from the Massachusetts Bay Transportation Authority ("MBTA"), the Massachusetts Port Authority ("MPA") and state, municipal and commercial fleets (id.). The forecast is based on an analysis of the current and future market drivers/barriers existing in the NGV market and an assessment of the likely impact of those factors on KeySpan's load additions (id.). The Company intends to target the following fleets:

- Massachusetts Bay Transportation Authority
- Massachusetts Port Authority
- State and Municipal Fleets
- Commercial Fleets
- State Implementation Plan (SIP) and Green Fleets Program (id. at 29-32).

Market barriers that continue to work against the development of an NGV market include: (1) restrictions on underground garage parking, a lack of easily accessible maintenance facilities for NGVs; (2) a limited number of CNG refueling sites; (3) an incremental cost of $3,000 to $5,000 for the CNG option in most light-duty vehicles; and (4) a high capital cost to construct refueling stations (Exh. KED-1 at 32). NGVs also continue to face competition in the alternative-fuel vehicle market from hybrid-electric vehicles, reformulated gasoline, low-sulfur diesel and biodiesel (id.).

⇒ Seasonal Firm Gas Sales and Large-Scale Power Market

KeySpan's assessment of the seasonal firm gas sales and large-scale power market is that the natural gas required to meet the demands of these markets during the forecast period will not have an impact on KeySpan's sendout requirements or resource plan (Exh. KED-1, at 33). All seasonal firm gas sales and power generation previously served by KeySpan converted to transportation before the date of the filing of the Supply Plan (id.). In addition, KeySpan is not currently aware of any potential seasonal firm gas sales customers or large-scale gas-fired power generating facilities planned for locations with the KeySpan service territory over the forecast period that would not procure their natural gas requirements from a third-party (id.).

Consistent with KeySpan's recent experience, if a new seasonal firm sales customer or gas-fired power plant were to be located in KeySpan's service territory, KeySpan believes that the gas requirements of such facilities would likely be served by third-party gas suppliers in conjunction with firm transportation service provided by KeySpan from the city gate to the facility (Exh. KED-1, at 33). Accordingly, KeySpan's forecast shows no demand for the seasonal firm gas sales or large-scale power generation markets and no impact on the resource plan (id.).

⇒ Demand-Side Management ("DSM")

KeySpan is in the fourth year of a five-year energy efficiency program approved by the Department on June 28, 2002 (Exh. KED-1, at 34). KeySpan expects to continue its efficiency program beyond the expiration of the current plan (id.).

KeySpan estimates DSM volume reductions of 459 BBtus per year on average during the forecast period (Exh. KED-1, at 34 and Chart III-B-5). KeySpan utilized a spreadsheet developed within the NSTAR Energy Efficiency Collaborative (hereinafter referred to as the "Energy Efficiency Model") to develop projections of future energy-savings impacts of the DSM programs (id. at 34). The Energy Efficiency Model is used to track costs and benefits relating to energy efficiency and market transformation programs (id.). In April 2005, KeySpan updated the Energy Efficiency Model to reflect current assumptions relating to program costs and benefits, program participation, the discount rate and avoided natural gas costs (id.). Once data is input to the Energy Efficiency Model, it calculates the present value of program benefits and costs and produces a cost/benefit ratio (id). The output of the model also includes a projection of future energy savings for each program analyzed (id.). For the analyses conducted to estimate the future savings from KeySpan's DSM programs, funding for all programs was assumed to continue over the forecast period 2006 through 2010 (id.). Savings from program measures are reflected in the model over the entire useful life of measures (id.).

⇒ Transportation Migration

Because the Company has an obligation to plan for the capacity needs of customers taking service as firm sales customers and converting to transportation service, projections of transportation migration from sales service do not affect the Company's planning load (i.e., the amount of load for which the Company is procuring capacity resources) (Exh. KED-1, at 35).

Therefore, KeySpan has made no adjustment to the sendout requirement to account for transportation migration (id.). However, KeySpan expects to operate its transportation program through the forecast period (2006 through 2010) (id.). Therefore, KeySpan has formulated and included a migration forecast in its Supply Plan based on actual historical experience dating back to 1997, for informational purposes (id. at 36-38).

In addition, under the Company's approved Terms and Conditions of Distribution Service, customers who commence service with the Company as transportation-service customers are exempt from the capacity-assignment program (Exh. KED-1, at 35). Therefore, the load requirements of these customers are excluded from the sendout forecast (id.). Specifically, based on the Company's historical data tracking "direct-to-transportation" service customers, the Company has reduced the forecasted incremental sendout volumes for firm sales service by 436 BBtu per year (id. at 39).

f. Sensitivity Analysis

KeySpan also considered the levels of uncertainty in the demand and sendout forecasts and developed high- and low-demand scenarios relative to the base-case forecast to determine the impact of various economic and demographic changes on its resource portfolio (Exh. KED-1, at 42). KeySpan began the sensitivity analysis by identifying the key variables contributing to the uncertainty of the demand forecast, which include fuel-price volatility and economic activity (id. at 31). KeySpan then developed high- and low-demand scenarios to create a reasonable bandwidth around its base-case demand forecast to account for these uncertainties (id., see also Exh. KED-DTE-2-24).

(i) High-Demand Scenario

The Company's high-demand scenario results in gross incremental load additions of 21,311 BBtu and net additions of 18,137 BBtu (Exh. KED-1, at 42-43 and Chart III-B-13) compared to 18,546 gross and 15,366 net in the base case. For the high-demand scenario, KeySpan incorporated optimistic, but realistic, assumptions about economic and demographic growth, which results in a higher level of demand than that reflected in the base-case demand forecast (id. at 43). The high-demand scenario assumes that household growth and employment rates will be 50 percent greater than those forecasted in the base-case scenario (id.; Exh. KED-DTE-2-25). Accordingly, for the high-demand scenario, KeySpan assumed that the growth rate of households will average 1.43 percent and the employment growth rate will average 0.69 percent (Exh. KED-1, at 43).[2]

(ii) Low-Demand Scenario

The Company's low-demand scenario results in gross incremental load additions of 15,872 BBtu and net load additions of 12,681 BBtu (Exh. KED-1, at 43-44 and Chart III-B-15) compared to 18,546 gross and 15,366 net in the base case. Similar to the High Demand Case, the Company incorporated pessimistic, but realistic assumptions about economic and demographic growth, which results in a lower level of demand than that reflected in the base-case demand forecast (id. at 44). The low demand scenario assumes that the household and employment growth rates were assumed to be 50 percent lower than in the forecasted base case (id.).

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2 For both the high- and low-demand scenarios, KeySpan further assumes that gas and oil prices will remain the same as those in the base-case demand forecast (Exh. KED-1, at 43). Updated commodity price forecasts resulting from Hurricane Katrina were not available when the Company prepared the forecast for the Supply Plan (id.; Exh. KED-DTE-2-15). For gas prices to affect the high-demand scenario, prices would have to be lower than in the base-case forecast, which the Company believes is highly unlikely to occur, and which might not be consistent with the other economic assumptions driving the forecast (Exh. KED-1, at 43). In addition, since oil and gas are substitute commodities, the prices of these commodities tend to track each other in the long run (id.). Therefore, the Company has assumed that oil prices remain at the same level as that reflected in the base-case forecast (id.).

Therefore, for the low-demand scenario, KeySpan assumed that the annual growth rate of households drops to an average of 0.47 percent per year and the annual growth rate for employment drops to an average of 0.23 percent per year during the forecast period (Exh. KED-1, at 44). The lower economic growth results in a lower level of gross and net annual load additions of averaging 3,174 BBtu per year and 2,536 BBtu per year, respectively, compared to 3,709 BBtu and 3,073 BBtu in the base case (id. at 44-45).

g. Comparison of the 2001 and 2005 Demand Forecasts

The Supply Plan compares the results of the Company's 2005 and 2001 Demand Forecasts and shows that the total gross and net-load additions are lower in the current forecast than the previous forecast (Exh. KED-1, at 45). The lower net-load additions in the current forecast mainly result from a combination of higher projected average residential sendout, offset by lower apartment and commercial/industrial sendout and lower expected NGV sales (id.). The total net load additions are forecasted to be 2,236 BBtu in 2005 versus 2,658 BBtu in 2001 (id. at 45 and Chart III-B-17).

h. Comparison of Forecast and Actual Load

The Supply Plan also compares actual and forecast loads for the traditional markets for the historical four-year period 2001-2004 in the KeySpan service territory (Exh. KED-1, at 46 and Chart III-B-18; Exh. KED-DTE-2-27). Forecasted loads for the residential sector are 0.2 percent (509 BBtu) lower than actual load additions for the 2001-2004 period (Exh. KED-1, at 46). Over the forecast period, this represents 102 BBtu per year on average (id.). For the commercial/industrial sectors, the forecasted loads are 0.3 percent (457 BBtu) higher than actual additions for this period (id.). This represents 91 BBtu per year on average (id.). In total, the forecasted loads are 0.2 percent (966 BBtu) lower than actual additions, or 193 BBtu per year (id.). Therefore, although the comparison shows some fluctuation from year to year, on an overall basis, the results show minimal forecasting error (id.).

i. Method for Projecting Sendout

In the second step of the Company's forecasting methodology, the Company uses regression equations of daily sendout versus daily temperature over a recent 12 month period to calculate the reference-year "springboard" (Exh. KED-1, at 47). Once this step is completed, the incremental sendout requirements are added to the reference-year sendout requirements to determine KeySpan's total normalized forecast of customer requirements over the forecast period (id.).

To establish baseline sendout requirements, the Company developed a linear-regression equation for each of the four geographic areas comprising the KeySpan service territory using data for the period May 1, 2003 through April 30, 2004 (Exh. KED-1, at 47). Through the use of the linear-regression equations, the Company normalized daily sendout for each of the geographic areas (id.). Specifically, the actual daily firm sendout is regressed against the daily EDD data, EDD data lagged by one day and a weekend dummy variable (id. at 47-48). These data elements were selected for the regression analysis since these elements have been, and continue to be, the major explanatory variables underlying KeySpan's sendout requirements (id. at 48). All of the adjusted R-squares are in the range of 0.959 to 0.982, and all of the t-statistics of the independent variables are greater than 2.0, indicating that these variables are significant to the explanatory power of the equation (id.).

Each year, KeySpan observes seasonal variations in the use-per-EDD requirements of its firm sales customers (Exh. KED-1, at 48). These requirements increase going into the heating season, plateau in the December through February time period, and then decrease in the later months of the heating season (id.). To capture this experience within each regression equation, KeySpan used monthly independent variables for September through June to model this seasonal change (id.). Each monthly variable has a coefficient of zero for all days not in its respective time period and a coefficient of the actual EDD value for the days within its time period (id.). The resulting coefficient is the heating increment for the given time period (id.). The positive signs on the coefficients imply that as EDD increases, the Company's sendout requirements increase as well, which corresponds with the experience of KeySpan (id.).

KeySpan also observed the increase in the explanatory power of the regression equations through the inclusion of the one-day lagged EDD value (Exh. KED-1, at 48). The underlying theory of this analysis is that heating requirements increase as two consecutive days of cold weather occur, which cools down structures to a greater degree than would be experienced on a single day (id. at 48-49). The variable contains the prior day's EDD value, except for the months of July and August where this value is set to zero to reflect the fact that there is no heating requirement in the summer (id. at 49). The positive sign of the coefficients indicates that two days of cold weather increases the heating requirement over that experienced for one cold day (id.).

Finally, KeySpan observed changes in sendout requirements between weekdays and weekends, which can be attributed to differences in load requirements occurring during the workweek as compared to the weekend (Exh. KED-1, at 49). To model this, the regression equations include a weekend dummy variable that is set to 1 on Saturdays and Sundays and 0 on weekdays (id.). A negative coefficient for the weekend variable implies a load reduction on weekend days versus weekday days, all other factor being equal (id.). A positive coefficient for the weekend variable implies a load increase on weekend days versus weekday days, all other factors being equal (id.).

The observed characteristics include the following: (1) sendout requirements are directly related to EDD; (2) sendout requirements change on a seasonal basis; (3) sendout requirements are affected by EDDs that occur over a multi-day period; and (4) sendout requirements differ by day of the week (Exh. KED-1, at 49). Thus, KeySpan has developed a set of reliable regression equations to establish the basis upon which future sendout requirements can be forecast (id. at 49-50). Using its forecast of load additions and an appropriate set of daily EDD values for a design year, the Company can successfully plan its operational requirements to provide a low-cost, adequate and reliable supply of natural gas to customers (id. at 50).

j. Normalized Forecast of Customer Requirements

KeySpan's final step in performing its forecasting analysis is to combine the 2003-04 reference-year sendout, which is derived from the regression analysis, with the annual incremental sendout forecast referenced previously (Exh. KED-1, at 50-51). The base-case scenario customer requirements ranged from 119,071 BBTu in 2005/2006 to 128, 227 BBtu in 2009/10 (id.).

3. The Department Should Find the Company's Long-Range Forecast to be Reviewable, Appropriate and Reliable.

The Company used the same end-use modeling methodology for the Supply Plan as was previously approved by the Department. KeySpan Energy Delivery, D.T.E. 01-105 (2003). The Company first developed separate traditional and non-traditional market forecasts which it then combined to yield total demand projections. The Company then applied its end-use modeling methodology for its traditional customers and estimated the total energy demand by end-use and fuel type. Further, the Company developed separate gas consumption estimates for existing and new categories of residential and C&I customers. This method is consistent with traditionally proven techniques previously approved by the Department. Boston Gas Company, D.P.U./D.T.E. 97-81, at 32-33 (2000).

The model's predictive power was tested though the application of an ex-post analysis comparing actual and forecast gross load additions over the entire KeySpan service territory for a historical four-year period (Exh. KED-1 at 46). The analysis indicated that the resulting total forecast load additions deviated from the actual by approximately 0.2 percent. In addition, the Company developed a statistically sound methodology to project sendout. Accordingly, the Department should find that the Company's Long-Range Forecast is reviewable, appropriate and reliable.

III. THE COMPANY'S SUPPLY PLAN

A. Standard of Review

The Department is required to ensure "a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost." G.L. c. 164, § 69I. In fulfilling this mandate, the Department reviews a gas company's supply planning process and the two major aspects of every utility's supply plan – adequacy and cost. Commonwealth Gas Company, D.P.U. 92-150, at 53 (1995); Colonial Gas Company, D.P.U. 93-13, at 49-50 (1995).

The Department reviews a gas company's five-year supply plan to determine whether the plan is adequate to meet projected normal-year, design-year, design-day, and cold-snap firm sendout requirements. The Department's review of reliability is included in the Company's consideration of adequacy. See Fall River Gas, D.T.E. 99-26, at 18 (2000); Colonial Gas Company, D.P.U. 93-13, at 50, n.22. In order to establish adequacy, a gas company must demonstrate that it has an identified set of resources that meet its projected sendout under a reasonable range of contingencies. If a company cannot establish that it has an identified set of resources which meet sendout requirements under a reasonable set of contingencies, the company must then demonstrate that it has an action plan which meets projected sendout in the event that the identified resources will not be available when expected. Colonial Gas Company, D.P.U. 96-18, at 31; Commonwealth Gas Company, D.P.U. 92-159, at 54; Colonial Gas Company , D.P.U. 93-13, at 50.

In its review of a gas company's supply plan, the Department reviews a company's overall supply planning process. Pursuant to this standard, a gas company must establish that its supply planning process enables it to: (1) identify and evaluate a full range of supply options; and (2) compare all options, including Conservation and Load Management, on an equal footing. Colonial Gas Company, D.P.U. 96-18, at 31; Commonwealth Gas Company, D.P.U. 92-159, at 54; Colonial Gas Company, D.P.U. 93-13, at 51-52.

The Department also reviews whether a gas company's supply plan minimizes cost. A least cost supply plan is one that minimizes costs subject to trade-offs with adequacy and environmental impact. Commonwealth Gas Company, D.P.U. 92-159, at 55; Colonial Gas Company, D.P.U. 93-13, at 51-52.

B. The Company's Supply Plan is Sufficient to Meet its Sendout Requirements and Will Lead to the Addition of Resources that Contribute to a Least-Cost Supply Plan.

1. Introduction

The Company evaluated its existing resource portfolio in relation to its firm-sendout forecast (Exh. KED-1, at 62). As part of this evaluation, the Company reviewed the possible strategies for meeting customer requirements using the existing resource portfolio in a variety of circumstances, using the SENDOUT® model (id.).[3] Based on the results of this analysis, the Company is able to make preliminary decisions on the adequacy of the resource portfolio and its ability to meet system requirements over the longer term (id.).

For the purpose of preparing the Supply Plan, the Company analyzed three demand scenarios, i.e., a low-demand scenario, a base-case scenario and a high-demand scenario (Exh. KED-1, at 63). In addition, the Company analyzed a cold-snap scenario and a contingency scenario using the Company's existing resource portfolio (id.). The examination of these various scenarios enables the Company to test the adequacy and flexibility of the resource portfolio (id.).

2. Resource Portfolio

a. Expected Available Resources

The KeySpan resource portfolio is composed of the following categories of available resources to meet design-day and design-year sendout requirements: (1) domestic transportation and underground-storage contracts; (2) Canadian contracts; (3) supplemental resources; (4) other purchased resources; and (5) gas-commodity supplies.

(1) Transportation and Underground Storage Contracts

KeySpan has capacity entitlements on multiple upstream pipelines that provide access to domestic production fields and that afford the Company a level of operational flexibility to ensure the least-cost and reliable delivery of gas supplies (Exh. KED-1, at 64). In general, the KeySpan transportation agreements provide: (a) transportation to the Company's citygates for Gulf Coast, Market Area and Canadian supplies; (b) transportation for underground-storage withdrawal and injection; or (c) the flexibility to meet any balancing and no-notice requirements

3 Since 1996, Boston Gas has been using the SENDOUT® Model as its primary analytical tool in the portfolio design process (Exh. KED-1, at 62; Exh. KED-DTE-1-7). The SENDOUT® Model is a linear-programming optimization software tool used to assist in evaluating, selecting and explaining long-term portfolio strategies (id.).

(id. at 64-65). KeySpan's domestic transportation and underground-storage contracts are as follows:

- **Algonquin Gas Transmission Company**

KeySpan has a total capacity entitlement of 383,412 MMBtus/day on the Algonquin Gas Transmission ("Algonquin") pipeline system. Because Algonquin is not directly connected with any production or underground-storage area, the Company also holds capacity entitlements on interstate pipelines that interconnect with the Algonquin system upstream of the Company's distribution system.

- **Dominion Gas Transmission, Texas Gas Transmission Corporation and Transcontinental Pipeline**

KeySpan holds a number of contracts that are used to transport volumes on upstream interstate pipelines serving Algonquin. All of these contracts eventually feed into the Algonquin system where the volumes are transported to the Company's citygates.

- **Iroquois Gas Transmission System**

KeySpan has contract entitlements of 51,738 MMBtus/day of firm transportation service on the Iroquois system on a 365-day basis.

- **Texas Eastern Transmission Company**

KeySpan has contract entitlements of up to 265,933 MMBtus/day of capacity directly connected to supply and storage areas on the Texas Eastern system.

- **Maritimes & Northeast Pipeline**

KeySpan has entitlements to 43,200 MMBtus/day of firm transportation service on each leg of the Maritimes pipelines. These contracts are used to transport the Company's Imperial supply volumes from Sable Island, Canada to KeySpan's service territory on a 365-day basis.

- **Tennessee Gas Pipeline**

KeySpan has capacity entitlements of 321,033 MMBtus/day on the Tennessee Gas Pipeline ("TGP") to its New England citygates.

- **Underground Storage Services**

KeySpan's underground storage assets provide the Company with the ability to meet winter-season loads, while avoiding the expense of adding 365-day long-haul transportation capacity. In addition to firm storage services with Tennessee and Texas Eastern (under rate schedules FS-MA and SS-1, respectively), KeySpan also holds firm storage contracts with Honeoye Storage Corporation, National Fuel Supply Corporation, and Dominion Gas Transmission, Inc.

(id. at 65-68; Exh. KED-AG-1-8).

(2) Canadian Supplies

The Company's Canadian supplies fall into two categories: (a) bundled capacity and gas commodity from western Canada pursuant to contracts with Alberta Northeast, Ltd. ("ANE"); as well as commodity contracts with BP Canada Energy Company (BP) and NEXEN Marketing (NEXEN); and (b) gas commodity from eastern Canada pursuant to a contract with Imperial Oil Resources ("Imperial") (Exh. KED-1, at 68). Gas purchased from Imperial is transported to the Company's citygates via the Company's long-haul capacity on the M&N Pipelines and short-haul capacity on Tennessee (id.). The ANE contracts, which are bundled capacity and commodity contracts, are due to expire in October 2006 (id.).

(3) Supplemental Resources

In addition to interstate pipeline and storage resources, KeySpan utilizes peaking supplies to meet its design-day requirements, along with other purchased resources (Exh. KED-1, at 69-71). Peaking supplies, including liquefied natural gas resources, are an important component of the resource mix in that these supplies provide KeySpan with the ability to respond to fluctuations in weather, economics and other factors driving the Company's sendout requirements (id. at 70).

In addition, the Company's current resource portfolio is sufficient to meet the Company's forecasted design-year sendout requirement throughout the forecast period with the addition of "Other Purchased Resources" during the heating season (Exh. KED-1, at71). Other Purchased Resources represent resources that are needed, and must be acquired by the Company on a short or long-term basis to fill an identified gap in the resource portfolio. The need for Other Purchased Resources may be filled through the procurement of market-area resource opportunities, long-term capacity contracts or other purchasing arrangements (id. at 71-72).

Table G-22D (Base Case) of the Supply Plan shows that in the 2005-06 forecast year, the Company will rely on Other Purchased Resources of 1,000 MMBtus in the 2005/06 winter heating season, which increases to 963,000 MMBtus in the 2006/07 winter heating season, and then is eliminated entirely in the base case following the addition of incremental pipeline capacity on the Tennessee ConneXion Project (Tr. 1, at 23). The Department recently approved the Company's agreement with Tennessee. KeySpan Energy Delivery, D.T.E. 05-35 (2006).

(4) Gas Commodity

Effective April 1, 2003, KeySpan entered into an Asset Management Contract with Merrill Lynch Commodities, Inc. ("MLC") (Exh. KED-1, at 72; see also Exh. KED-DTE-1-9 and Exh. KED-DTE-1-15). Under this arrangement, MLC was obligated to provide up to 669,445 MMBtus/day of city-gate delivered supplies through March 31, 2006 (Tr. 1, at 23, 25). The Company obtained supplies that were needed in excess of the MLC obligation through market-area purchases and short-term supply arrangements (Exh. KED-1, at 72). On March 29, 2006, in Docket D.T.E. 06-9, the Department approved a revised natural gas asset optimization service contract between KeySpan and MLC which became effective on April 1, 2006. Under the revised agreement, KeySpan will take a more active role in the day to-day management of the portfolio and as a consequence will share the obligation to procure the commodity resources needed to meet firm sendout requirements with MLC (Tr. at pages 24-25).

(5) Contract Renewals

As necessary during the term of the Supply Plan, the Company will employ a three-step analysis to reach a determination on contract renewals (Exh. KED-1, at 75). First, the Company will evaluate the need to maintain the contracts as part of the resource portfolio (id.). As part of this need analysis, the Company will consider the trends in transportation migration and the growth in transportation relating to new customers that have not previously been served by the

Company, and therefore, are not subject to the assignment of capacity (id.). If the Company determines that the resource is needed to meet firm sendout requirements, the Company will notify competitive suppliers serving customers on the KeySpan system to solicit their input on the Company's contract-renewal strategy, consistent with the requirements of the Company's terms and conditions (id.).

Second, the Company will evaluate the cost of renewing the existing resource with the cost of replacing that resource with other available market options (id.). This evaluation will be conducted based on both price and non-price factors. Until the Department makes the determination that the upstream capacity market is sufficiently competitive to warrant a modification of its obligation to procure and plan for the capacity needs of its customers, KeySpan will protect its rights to needed resources (id.). Therefore, the Company will renew or replace contracts for an extended time period to maintain flexibility, diversity and reliability consistent with least-cost principles, while balancing the circumstances of the evolving marketplace (id.).

b. Adequacy of Resource Portfolio

(1) Base Case

The Company's resource plan is sufficient to meet base-case design-year load requirements throughout the forecast period with the addition of incremental long-term capacity resources and supplemental short-term firm arrangements and market-area purchases during the peak period (Exh. KED-1, at 76, Table G22D (Base Case). The Company prepared the Base Case forecast in anticipation of the Department's approval of the Company's long-term capacity contract with Tennessee regarding the ConneXion project, which, as noted previously, was recently approved by the Department in D.T.E. 05-35 (id. at 76). In addition, the Base Case

Forecast anticipates the addition of a companion contract on the Algonquin pipeline to transport volumes available through the Tennessee ConneXion arrangement to the Cape Cod service area (currently forecast to be a minimum of 25,000 MMBtus/day) (id. at 76-77). Based on the Company's current projections, the addition of these long-term capacity arrangements will eliminate the need for Other Purchased Resources to meet design-day sendout requirements during the forecast period (id.; Tr. 1, at 23). The Company presented its incremental design-day capacity need in Table G-23D (Base Case) of the Supply Plan.

(2) High-Demand Case

The Company's resource plan shows that it can meet high-demand design-year load requirements throughout the forecast period, assuming the addition of the Tennessee ConneXion and Algonquin capacity (Exh. KED-1, at 78, Table G-22D (High Demand Case). On a design-year basis, the Company will supplement its resource portfolio with short-term firm arrangements and market-area purchases during the peak period (id. at 78). The incremental capacity need for the High-Demand case was presented in the Supply Plan Table G-23D (High-Demand Case).

As indicated, volumes in addition to the ConneXion and Algonquin supplies are required to meet design-day sendout requirements beginning in 2009/10 (Exh. KED-1, at 80). In addition, in the high-demand case, the amount of Other Purchased Resources needed to meet design-year requirements are significantly greater than that relied upon in the Base Case (id.). To ensure continued deliverability over the peak season, the Company will need to balance the resources available to the Company through its transportation and supply contracts with market area purchases to decide in a timely manner whether less reliance should be placed on Other Purchased Resources (id.).

To the extent that the Company determines through market intelligence or actual experience that constraints exist in the Company's ability to secure market-area supplies to supplement the resource portfolio and meet design-season requirements, the Company will adjust its planning and procurement strategies accordingly (id. at 80-81). In addition, should incremental demand increase consistent with the high-demand case projections, the Company would acquire adequate, least-cost capacity resources to address this need (id. at 81).

(3) Low-Demand Case

The Company's resource portfolio is adequate to meet total low-demand case system requirements over the forecast period, assuming the addition of the Tennessee ConneXion and Algonquin capacity (Exh. KED-1, at 81, Table G-22D (Low-Demand Case) and Table G-23D (Low-Demand Case)). On a design-year basis, the Company will supplement its resource portfolio with Other Purchased Resources as set forth in Table G-22D (Low-Demand Case) of the Supply Plan.

(4) Cold Snap Analysis

As noted infra in Section II.B.1(d), the Company performed a "cold snap" analysis to determine its resource requirements during periods of extended cold weather (Exh. KED-1, at 82). The results of the simulation, using the SENDOUT® model, showed that the Company's portfolio can meet the cold-snap requirement in all years of the forecast, and therefore, is adequate to meet sustained, cold weather in each year of the forecast (id. at 83).

(5) Contingency Planning

The Company also tested the capability of the portfolio to meet customer requirements in the event that the next planned capacity addition (ConneXion) is delayed by one year, i.e., from 2007/08 to 2008/09 (Exh. KED-1, at 83; Exh. KED-AG-1-12). In this contingency, the Base

Case demand forecast was assumed and both the normal and design-year requirements were modeled (Exh. KED-1, at 83). The contingency analysis showed that a one-year delay in the start of ConneXion will require the Company to contract for additional firm city-gate deliverability of 40,000 MMBtu/day for the 2007/08 winter and to plan for additional purchases of supply on the natural gas market (id.; Tr. 1, at 23). Although the Company has no indication from Tennessee that the project will not be on line by the in-service date, the Company is exploring alternate arrangements that would include the use of domestic or Canadian LNG as a backup supply (Exh. KED-1, at 83).

The Company's response to a gas-supply contingency is dependant on the nature and timing of the contingency (Exh. KED-DTE-1-10; Exh. KED-DTE-1-11). The Company addresses these contingencies by developing a resource portfolio with a high degree of diversity in order to ensure that the Company is positioned to replace or substitute for an unavailable resource at the time a contingency involving the resource arises (id.; Exh. KED-DTE-1-11).

(6) Future Planning

The Company's resource plan shows that there are sufficient resources within the portfolio to meet design-year and design-day sendout requirements throughout the forecast period assuming the addition of certain long-term resources. Specifically, there are several important considerations factored into the Company's resource-adequacy results:

First, the Company incorporated its recently-approved Tennessee ConneXion contract for 112,700 MMBtus per day of transportation capacity and has prepared the resource-adequacy analysis under the assumption that those volumes will be available to the portfolio over the forecast period (Exh. KED-1, at 84, Table G-23D (Base Case); see also KeySpan Energy Delivery, D.T.E. 05-35 (2006). Notwithstanding the addition of the Tennessee ConneXion volumes, the Company is projecting in this filing that design-day load will increase by approximately 25,000 MMBtu per day per year or by more than 100,000 MMBtu/day over the forecast period (Exh. KED-1, at 84). This means that, prior to the expiration of the forecast period, there is the potential for the Company to need to procure capacity resources in addition to the Tennessee ConneXion capacity (id., Chart IV-D-2).

Second, the Company's analysis assumes that all resource contracts expiring during the forecast period will be renewed without change (Exh. KED-1, at 84). However, the Company anticipates that the addition of the Tennessee ConneXion capacity has the potential to create unique opportunities to access other resources with more favorable pricing terms and/or operational flexibilities (id. at 84-85). To the extent that an opportunity arises to replace or substitute resource contracts in the existing portfolio with more favorable resources during the forecast period, the Company will pursue and present those opportunities to the Department for approval (id. at 85).

Third, a key consideration in the analysis of the resource portfolio is the need for additional transportation capacity on the Algonquin pipeline to deliver gas supplies to the Cape Cod service area over the forecast period (Exh. KED-1, at 85). The Supply Plan shows the forecasted design-day need of the Cape Cod service area and indicates that a minimum of 15,137 MMBtus/day will be needed by the end of the forecast period for supply purposes (id. and Chart IV-D-III). By contrast, the Tennessee ConneXion capacity will deliver to the southernmost delivery point on the Tennessee pipeline in Mendon, Massachusetts, which is the point of interconnection with the Algonquin pipeline serving the Cape (id. at 85). Therefore, the Company anticipated in the Supply Plan that it will enter into a long-term contract with

Algonquin for transportation capacity on its existing G Lateral system serving southeastern Massachusetts to deliver incremental volumes from Mendon, MA to the Cape (id.).

In that regard, the Company is currently in the negotiation process with Algonquin regarding the extension of its existing G Lateral facilities onto the Cape to tie into new or existing segments of the Company's distribution system at the intersection of Route 130 and Service Road in Sandwich (Exh. KED-1, at 85; Exh. KED-AG-1-13). Thus, the Company's procurement of additional capacity from Tennessee and Alquonquin to serve the Cape Cod service area is integrally related to the Company's proposal to supplement segments of its existing Sagamore Line to meet existing and future customer demand on the Cape (Exh. KED-1, at 85-86).[4]

c. The Department Should Find that KeySpan Has Identified Adequate Resources to Meet its Firm Sendout Requirements.

The Company has demonstrated that its normal-year, design-year, design-day and cold-snap requirements will be met through adequate supplies. Accordingly, the Department should find that the Company has identified adequate resources to meet its firm sendout requirements.

IV. CONCLUSION

Accordingly, after due notice, hearing and consideration, the Department should:

ORDER: That KeySpan Energy Delivery New England's petition for approval of its long-range forecast and supply plan should be APPROVED; and

4 On June 3, 2005, the Company filed a Petition for Approval by the Energy Facilities Siting Board (the "Siting Board") to construct 13.1 miles of new high-pressure distribution line on Cape Cod in the Towns of Sandwich, Barnstable, Yarmouth, Dennis and Harwich (the "Sagamore Line Reinforcement Project") (Exh. KED-AG-1-14). The proposed pipeline consists of three segments, each tying back to and paralleling (i.e., looping) portions of the Company's existing 42-mile high-pressure Sagamore Line that serves customers on Cape Cod. As noted in the Siting Board filing, the Company anticipates that the Algonquin pipeline extension will be placed in service for the 2007/08 heating season, with portions of the needed upgrades to the Company's distribution facilities coming on line beginning in November 2006.

FURTHER ORDER: That KeySpan Energy Delivery New England comply with all directives contained in the final order; and

FURTHER ORDER: That KeySpan Energy Delivery New England shall file its next long-range forecast and supply plan with the Department two years from the date of the Department's final order in this proceeding.

Respectfully submitted,

BOSTON GAS COMPANY, COLONIAL GAS COMPANY AND ESSEX GAS COMPANY, D/B/A/ KEYSPAN ENERGY DELIVERY NEW ENGLAND

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